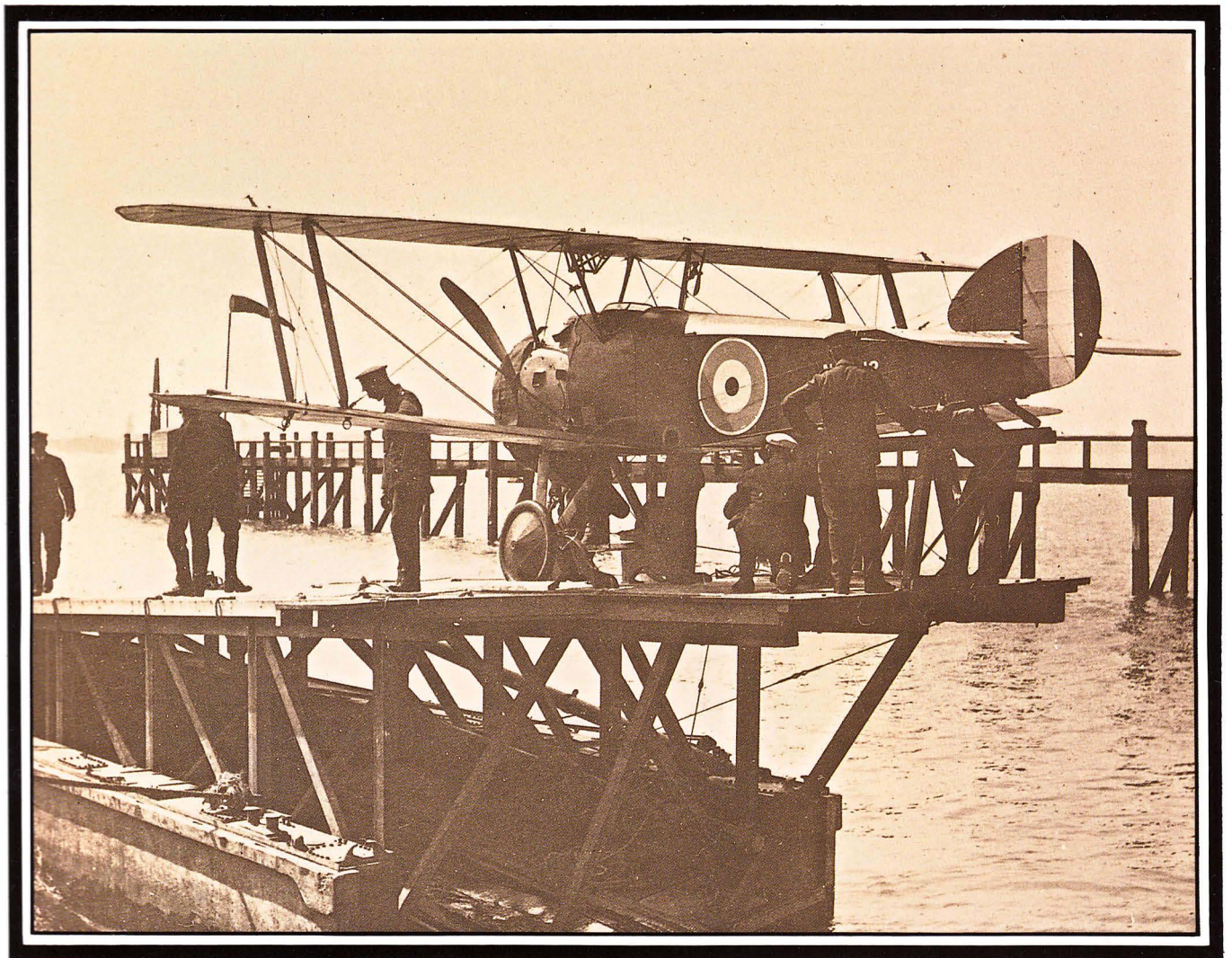


Sopwith 2F1 Camel



6

Wind-Sock Datafiles

WINDSOCK DATAFILE No.6 (Third edition)

AN INTRODUCTION

With the release in 2005/2006 of several new Sopwith Camel kits (including the 2F1 version) it seemed appropriate to reprint our popular Camel *DATAFILES* to meet demand from a new generation of modellers seeking unmatched reference material. We re-published No.26 on the F.1 in March 2004, now comes this new *limited-edition* of one of our very first *DATAFILES*, first published way back in 1987.

DATAFILE No.6 was the first ever publication devoted solely to the Sopwith 2F1 or 'Ships Camel', a variant that played an important part in British naval operations in the latter months of World War One. Successful in experimental work as well as in combat, several Zeppelins fell victim to 2F1 pilots; Camels from HMS *Furious* taking part in the world's first aircraft carrier strike, against Tondern airship base in 1918.

Post war, 2F1 Camels operated in Northern Russia against Bolshevik Forces and a handful were flown by Estonia and Latvia, but the longest-serving 2F1s were doubtless those used by Canada. These machines, of which there were at least nine, retained their upper wing slinging gear despite allocation to land bases and N7367, for one, was still in service by 1928. Today two genuine 2F1 Camels survive. N8156 at Canada's National Aviation Museum in Ottawa and Culley's famous N6812 recently-restored and currently

displayed in the Imperial War Museum, London.

R L Rimell, April 2004

Acknowledgements

Unless specified otherwise all photographs reproduced in the following pages are from the extensive collection of J M Bruce and G S Leslie. The author and publishers also wish to thank A Hogan and I D Huntley plus the following for permission to draw from their photographic and archival material; RAF Museum, K M Molson; G R Quick and R Vann.

ON THE COVER:

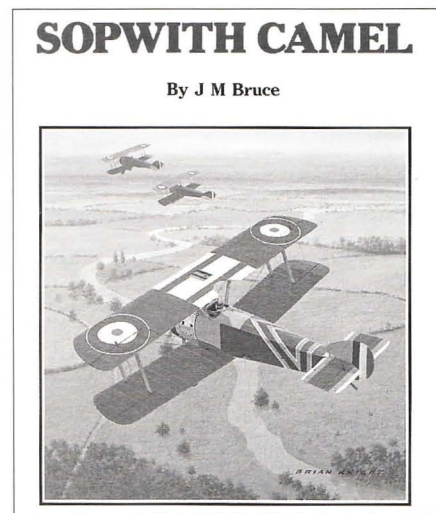
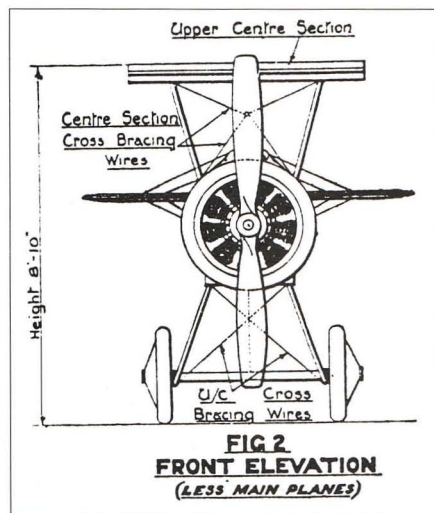
The photo shows Sopwith 2F1 Camel N6812 at Felixstowe on 31 July 1918 being prepared for a second attempt to fly from a towed floating take-off platform. On 11 August, Lieutenant Stuart Douglas Culley, piloting this machine, shot down Zeppelin L53. (*PRO Air 1/643*)

The colour profile depicts the 2F1 Camel (serial unknown) flown by Captain Bernard Arthur Smart with which he participated in the Tondern raid on 19 July 1918. The blue and white squares were for recognition purposes. See photograph on page 20. (*The late B A Smart*)

MORE GREAT CAMEL REFERENCES!

Albatros Productions have recently published a *limited edition* of Jack Bruce's classic *DATAFILE* on the F.1 Camel. 36 pages (plus covers) provide over 70 rare archive photos; a double page cutaway drawing; three colour profiles with detailed markings' data; over four pages of 1:48 and 1:72 scale plans plus over 36 specially-taken close-up detail shots of the RAF Museum Camel before its recent suspension in the new Milestones of Flight hangar at Hendon. Authentic narrative, detailed photo captions and appendices make this *DATAFILE* the ultimate reference for all Camel modellers. Price £12.00 from selected outlets or direct from the publishers.

For Camel colours and markings you can't beat Les Rogers' *Sopwith Camel Squadrons*! We've pulled out all the stops to make this our most lavishly-illustrated publication ever! In 60 packed pages, Les provides details of over 40 RFC/RNAS/RAF/USAS Camel units supported by 216 photos and almost 100 individual colour illustrations! For Camel modellers and enthusiasts this book is an absolute must! Price £19.00 from selected outlets or direct from the publishers.



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Sopwith 2F1 Camel

BY J M BRUCE, ISO, MA, FRAeS, FRHistS.

THE prototype of the Sopwith F1 Camel was completed just before Christmas 1916, and the design was soon ordered in quantity for both the RNAS and the RFC. At about the same time the Sopwith design staff were working on the design of a replacement for the Sopwith Baby single-seat seaplane; this, prepared under the company type designation FS1, was known as the Sopwith Improved Baby. The serial numbers N4 and N5 were allotted for two prototypes, which were on order in January 1917.

Details of N4's history are extremely scanty, and photographs of it have still to be found; but such references as exist suggest that it was built with its float undercarriage (which had provision for a droppable wheeled dolly for deck take-off) but crashed (so it has been suggested) in March 1917. All surviving references to, and photographs of, N5 suggest that it always had a wheeled undercarriage. Its airframe proper had all the characteristics of the FS1: separable rear fuselage (for ease of stowage aboard ship) with special control runs to the tail unit, armament consisting of one fixed and synchronised Vickers gun in the fuselage and a Lewis gun mounted inverted on the centre section, and steel-tubing centre-section struts. The engine was a French-made 130-hp Clerget rotary.

One of these two prototypes was officially recorded as delivered during the week ending March 19 1917. This is likely to have been N5, which arrived at Martlesham Heath on March 15 1917 to undergo performance tests, and was officially allotted to RNAS Grain on March 19. Its performance tests were flown on March 27, and it was at Grain by April 4, when it was flown by Harry Busteed: of that flight he recorded that he was 'not very favourably impressed'.

By June 7 N5 had been extensively modified in terms of operational equip-

ment. Launching tubes for eight Le Prieur rockets were fitted, four on each pair of interplane struts; the Lewis gun was carried on an Admiralty Top Plane Mounting, for which a small central cut-out was made in the centre section; air bags were fitted in the rear fuselage; and, remarkably, a wireless set was installed in the fuselage, with wind-driven generator and trailing aerial.

Clearly the RNAS were hoping to develop an effective fighter aircraft, particularly with anti-Zeppelin capability in mind. The original FS1 seaplane concept was not pursued and the landplane version was ordered in quantities. Sopwith gave the aircraft the designation 2F1; in service it was known as the 'Ship's Camel' or 'Split Camel'.

Contract

Nevertheless, the decision to put the 2F1 into production was not taken with any apparent urgency, for the first contract was not placed with the Sopwith company until September 8 1917: it was for 50 2F1s, N6600-N6649. Not until November 22 was the next contract placed, this time with William Beardmore & Co., Ltd., for N6750-N6799, to which N6800-N6849 were soon added. Later contracts were placed in 1918 with Beardmore (N7100-N7149), Arrol-Johnston (N7350-N7389), Fairey (N7200-N7299), Hooper (N8130-N8179), Pegler (N7300-N7349), Sage (N7850-N7979) and Clayton & Shuttleworth (N8180-N8229); but the Fairey contract was cancelled in September 1918, while Pegler and Sage made no deliveries. As far as is known, all production 2F1s had the advantage of the 150-hp Bentley BR1 engine; and control runs to the tail surfaces were redesigned and disposed externally.

First deliveries were made in late October/early November 1917; the fourth production 2F1, N6603, was at Grain on November 5 1917. Deliveries from the Beardmore works started in March 1918: N6750 had been flown, possibly for the first time, on February 20 1918; N6799 was delivered on May 12 and production continued without a break. The 100th Beardmore 2F1, N6849, was delivered to Renfrew on August 6 1918.

Not surprisingly, many of these ship-board Camels were allotted to battleships,

battlecruisers, cruisers and carriers such as HMS *Manxman*, *Pegasus*, *Vindex* and *Furious*; at least two (N6804 and N6805) went to RAF Imbros in the Aegean in October 1918. The 2F1s that operated from battleships and cruisers had to fly off from minuscule platforms, employing the technique that had been pioneered by the RNAS using Sopwith Pups. (See WINDSOCK DATAFILE No. 2).

A more alarming means of take-off was from the deck of a lighter towed by a destroyer. The earliest attempt nearly cost the life of one of the Naval Wing's first pilots, Lt-Col CR Samson, for his 2F1, N6623, was fitted with a rigid skid undercarriage similar to that of the Sopwith 9901a Pup. Wooden troughs were fixed to the lighter's deck to ensure a straight take-off run, but when tried on May 30 1918 the skids jumped from the troughs and fouled the lighter's deck structure; the Camel went over the bows; Samson got very wet but was unhurt.

With normal wheel undercarriages, later take-offs were successful, that of Lt Stuart D Culley on August 11 being spectacularly rewarded by the destruction of the Zeppelin *L53*. His 2F1, N6812, had two fixed Lewis guns on the centre section. Following this flight Culley evolved a jettisonable undercarriage for the 2F1: one such aircraft had twin synchronised Vickers guns.

Some three weeks before Culley's destruction of *L53*, seven 2F1s made history on July 19 1918 by mounting the first true carrier-borne air strike in history. They took off from HMS *Furious* to bomb the Zeppelin base at Tondern, and their bombs destroyed *L54* and *L60* in their sheds. Only two of the seven Camels managed to rejoin their naval task force after the action.

Other 2F1s were used in experiments in dropping aeroplanes from the rigid airship *R23*, and as late as February 1921 N7352 had been fitted with the Airship and Overhead-Wire Landing Gear. Presumably this followed experiments in 'landing' on an elevated cable, conducted (with Pups and Camels) at Grain from early 1920.

In the immediate post-Armistice period at least eight 2F1 Camels were taken to the Baltic area in the carrier HMS *Vindictive*, and were operational as fighter-bombers in the anti-Bolshevik campaign in 1919. They flew from a makeshift airfield at Koivisto, and three of them were handed over to the Latvians in November 1919. One 2F1, N6616, went to Estonia and was acquired by the Estonian Air Force. □

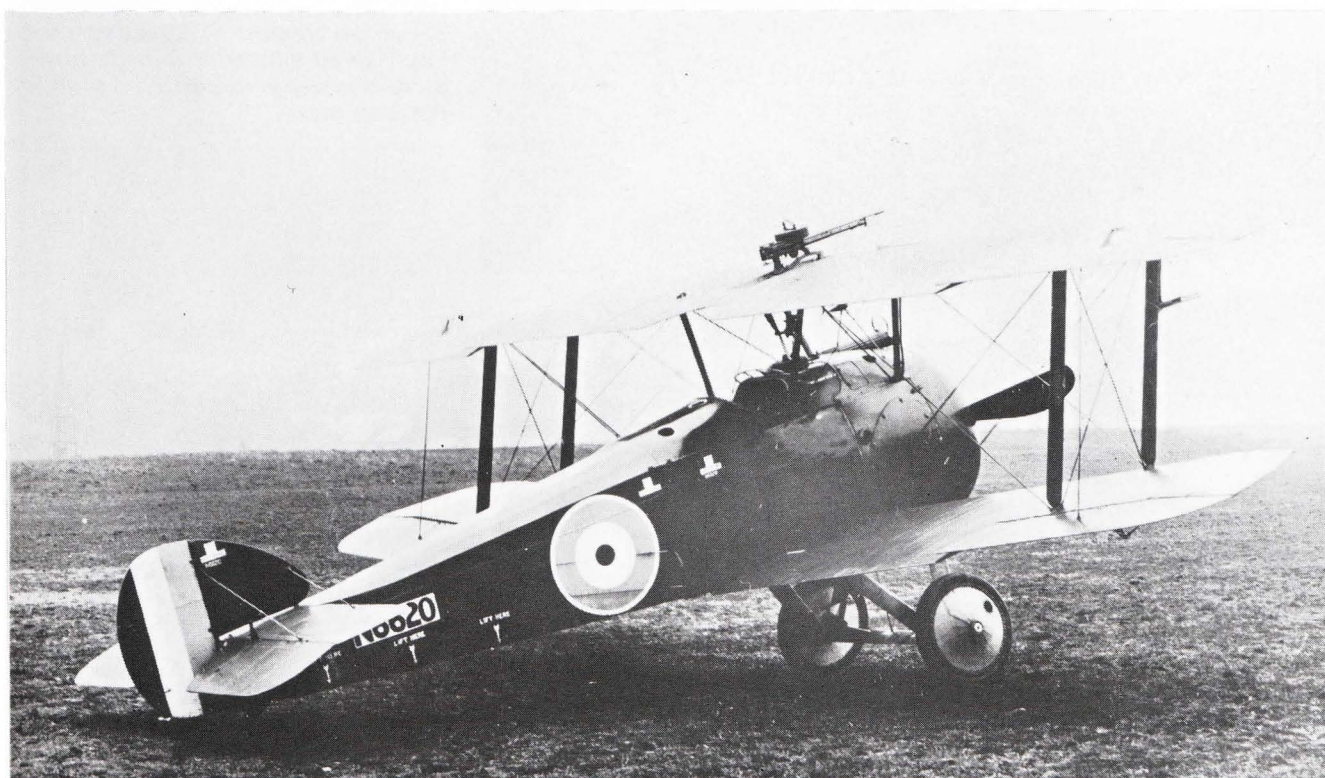
▼ According to the caption associated with the original photograph (dated June 4 1918) it depicts, 'Capt. Thyne, RAF [probably Capt. T K Thyne] practising landing on forward deck [of HMS *Furious*] in Sopwith Camel'. This seems unlikely, however: it is more probable that Thyne was taking off. (RAF Museum)

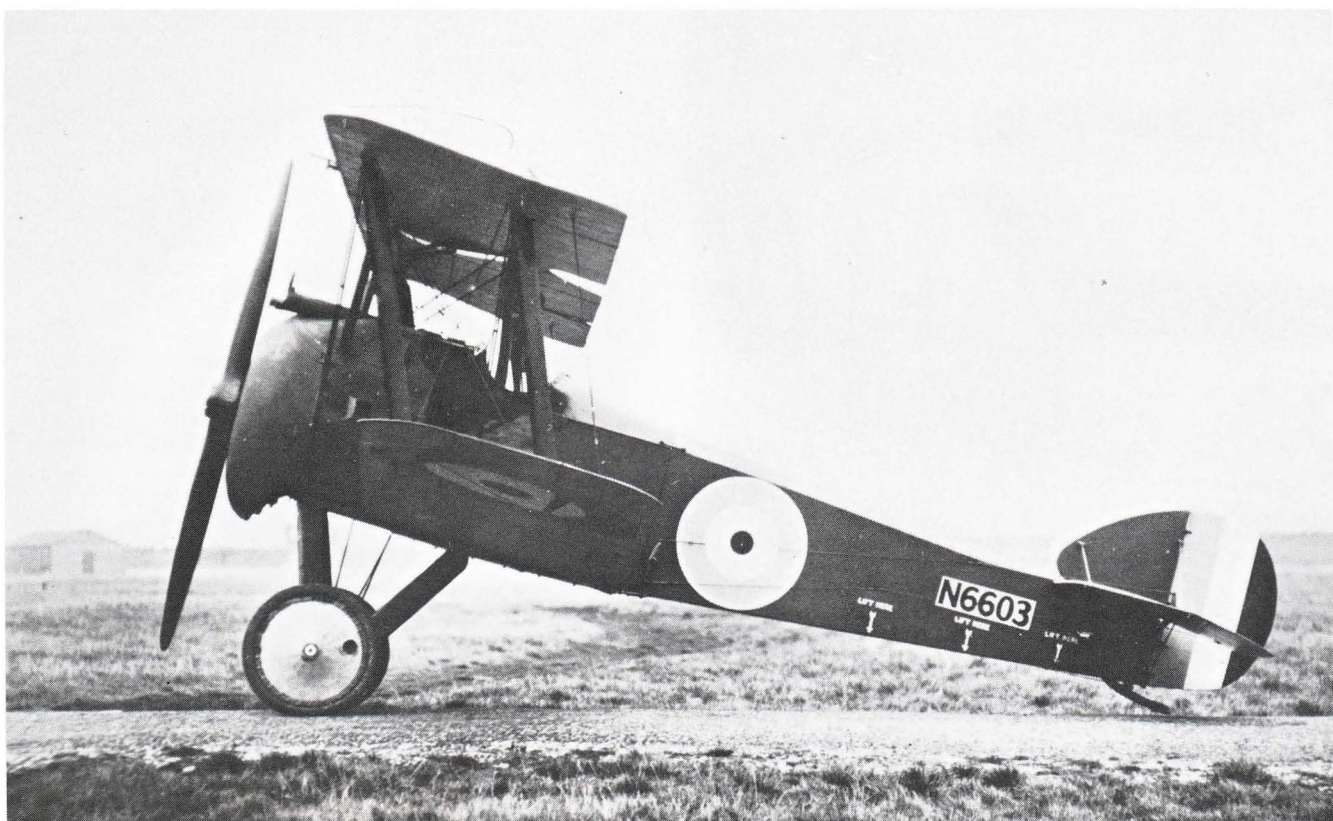


► Cowling, fairing and armament details, and the steel-tube centre-section struts are seen in this photograph of Flt Cdr A B Shearer in a 2F1 that was probably N6610. That Camel was on the strength of the RNAS War School, Manston, in January 1918; and Shearer was on the staff of the School from October 15 1917 until he went to No. 227 Sqn., RAF, in Italy in August 1918. (K M Molson)



▼ In this view of the starboard side of a 2F1, N6620 displays the Sopwith practice of marking component numbers only on the starboard side of fin and front and rear portions of the fuselage. Under this marking on the fin and forward fuselage the aircraft's serial number was painted in small characters. N6620 was an aircraft of RNAS Great Yarmouth, later of Burgh Castle. (RAF Museum)





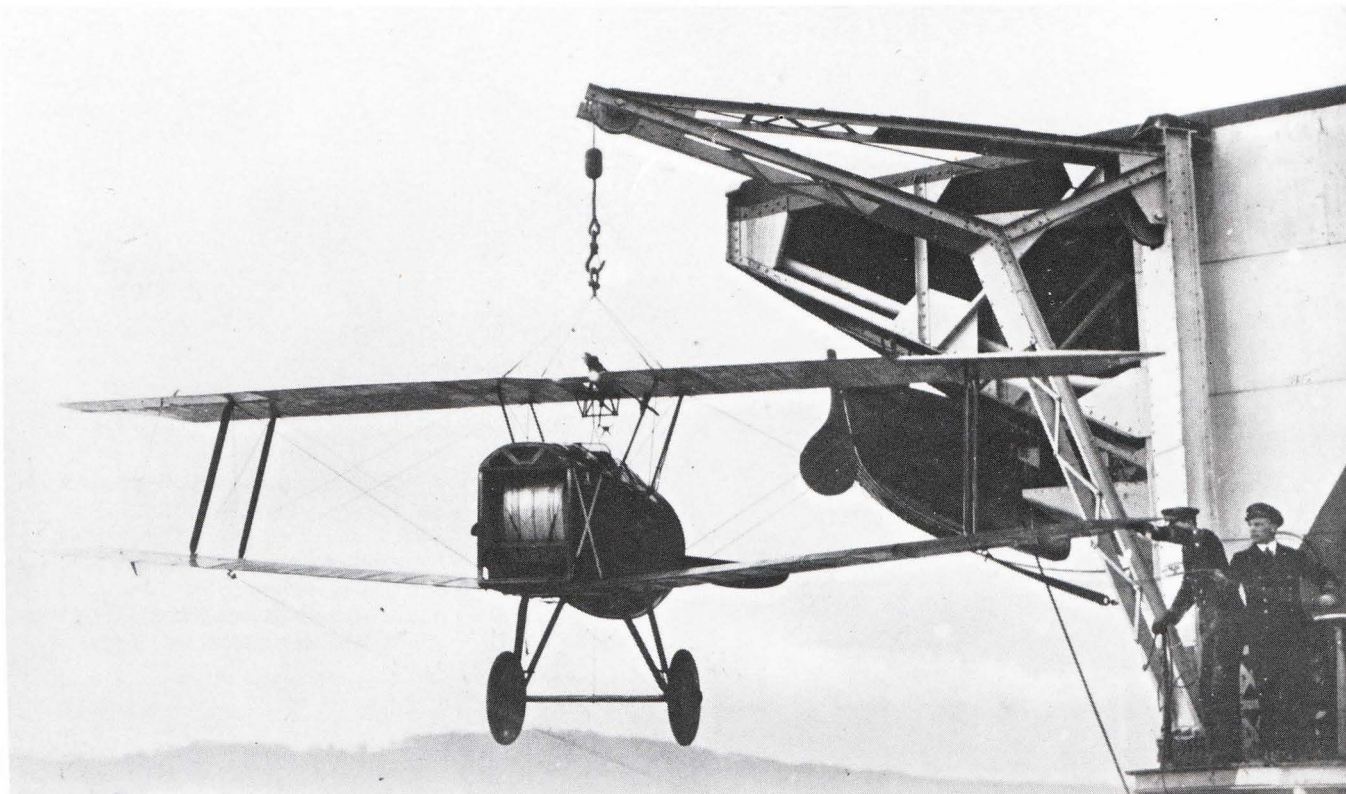
▲▼ The fourth production 2F1, N6603, at Grain: these two photographs are dated November 5 1917. This Camel saw shipboard use on the carrier HMS *Pegasus*, the battlecruiser HMS *Tiger*, and the cruiser HMS *Melbourne*. Note, on the starboard rear centre-section strut, the Rotherham fuel pump, a standard feature of the pro-

duction 2F1.

N6603 is finished in the 'standard' 2F1 Camel scheme of PC10 Khaki upper surfaces and clear-doped lower surfaces. The cowling and metal panels were painted in Battleship Grey with the wood areas of the mid fuselage and rear turtledeck back to the fuselage separation point clear varnished and

polished. Note the clear-doped wheel covers and fuselage 'Lift Here' stencilling indicating the handling points. In these photographs the external elevator lever and control cables can be seen to advantage along with the turnbuckles securing the rear fuselage which was detachable so as to afford easy stowage.

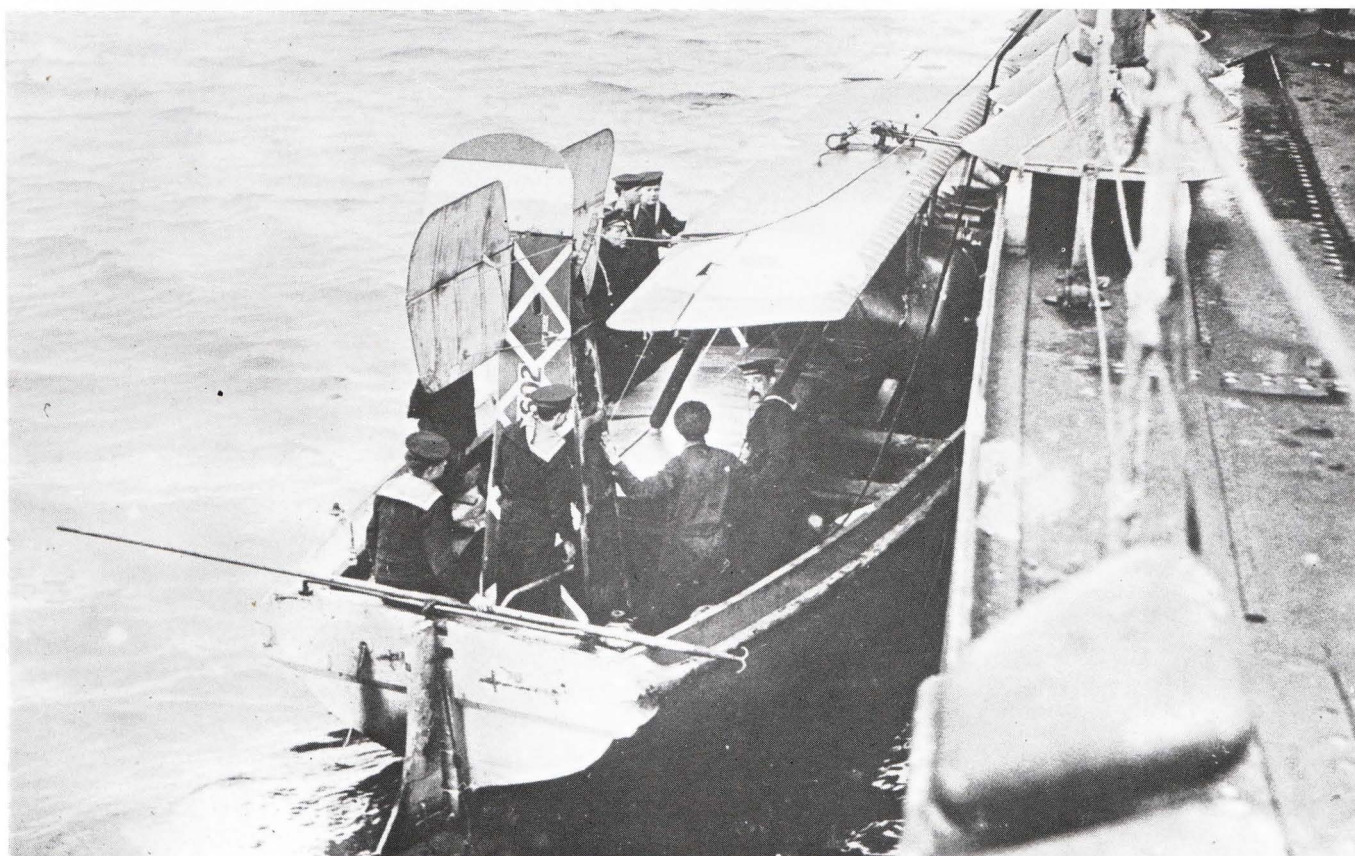


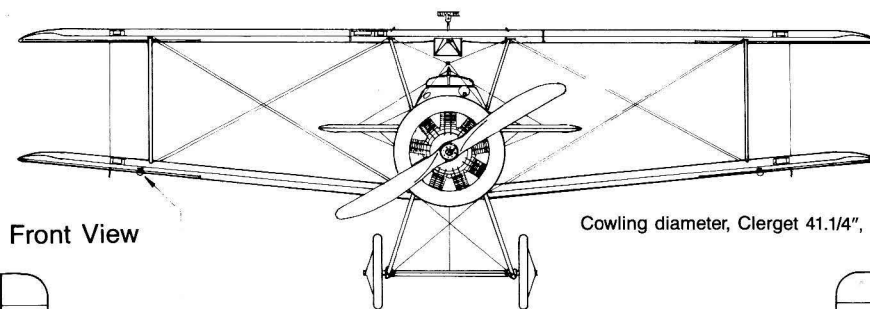


▲ These photographs, taken on April 5 1918 as Sopwith 2F1 N6602 was being placed aboard HMS *Furious*, indicate clearly the point of division of the aptly-named 'Split Camel's' fuselage. This machine was also aboard HMS *Caledon* at one stage in its career. In the upper photograph the large fuel tank situated directly behind

the pilot's seat is clearly seen while both illustrations reveal the lifting eyes and slinging cables for hoisting the Camel aboard ship. N6602's markings were unusually elaborate for a 2F1 and their true significance and purpose may have been more than merely that of identification. There is no evidence of a fuselage roundel beneath the white

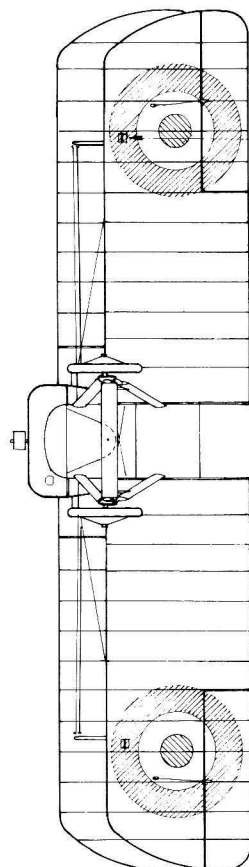
lattice markings and so was presumably overpainted. Note the heavy staining of the fuselage underside (below) and the uncovered area at rear affording easy access to the tailskid. Full details of this machine's colourings appear in *Fabric*, N6602 being the subject of one of the rear cover plates. (RAF Museum).



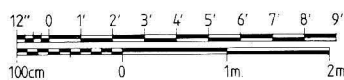


Front View

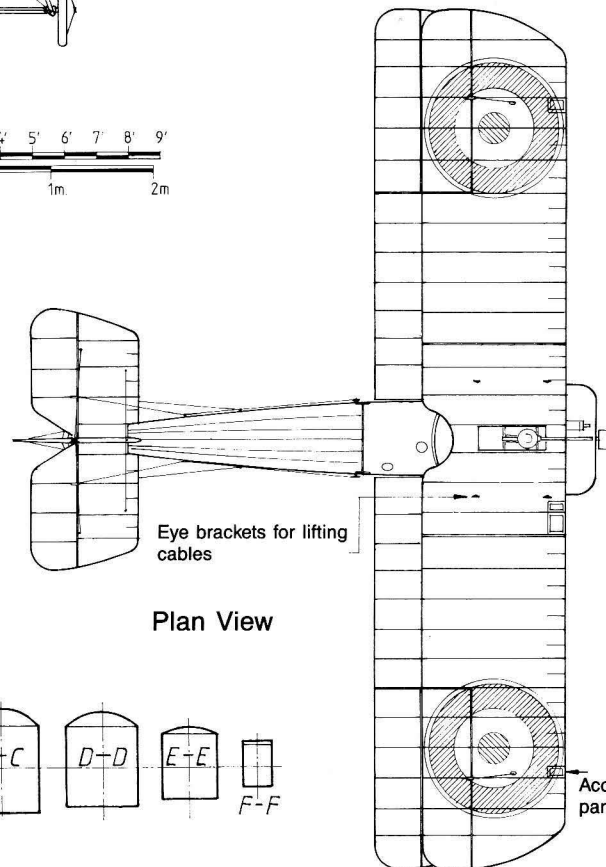
Cowling diameter, Clerget 41.1/4", A.R.1, 43.1/2"



Piquet ring

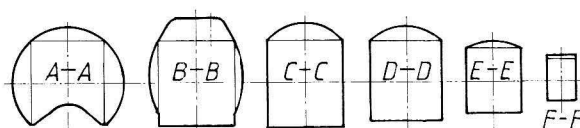


Underside View



Eye brackets for lifting cables

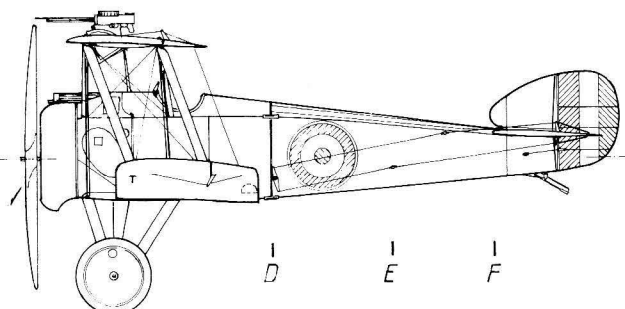
Plan View



Fuselage Sections

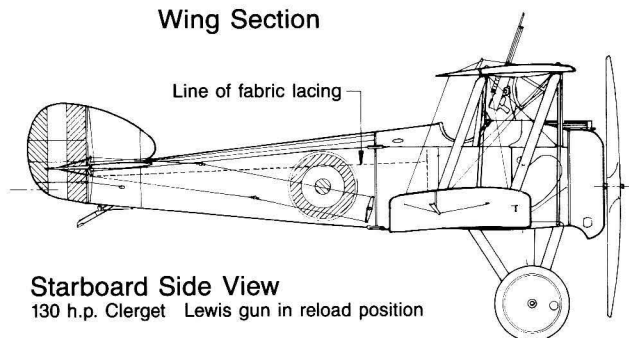
A B C D E F

Wing Section



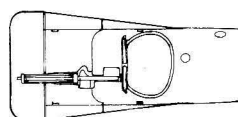
A B C

Port Side View
130 h.p. Clerget

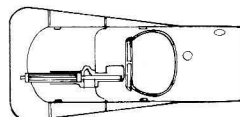


Line of fabric lacing

Starboard Side View
130 h.p. Clerget Lewis gun in reload position

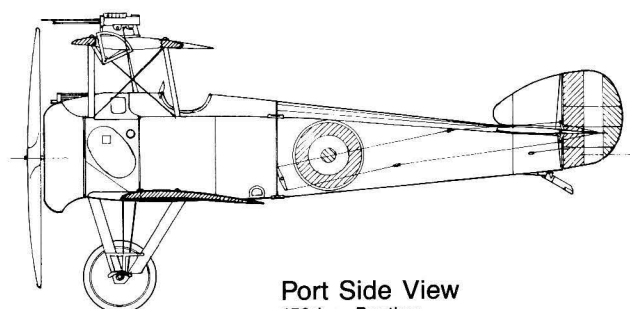


130 h.p. Clerget 9B

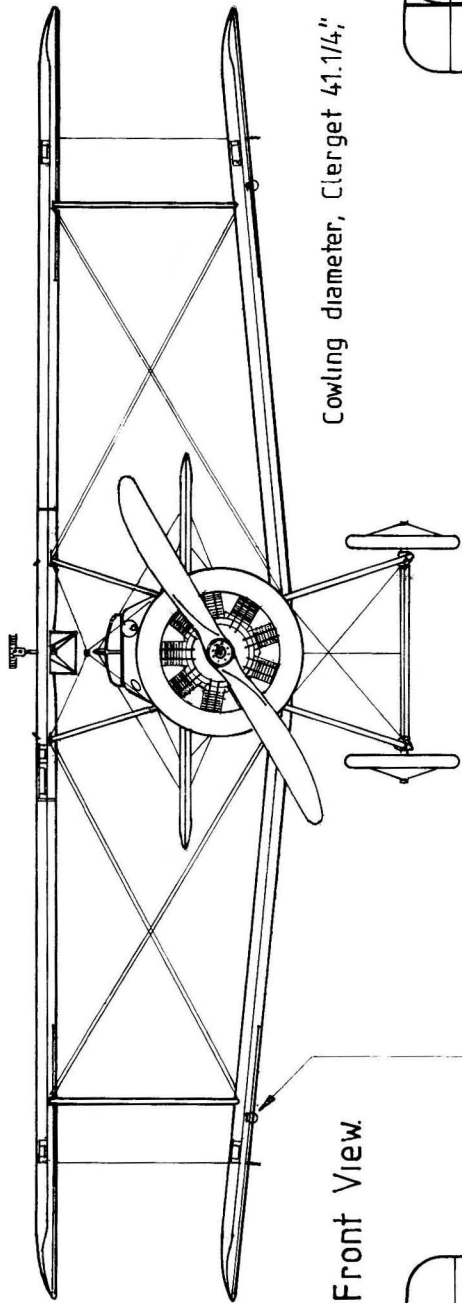


150 h.p. Bentley A.R.1

Detail — Fuselage Decking



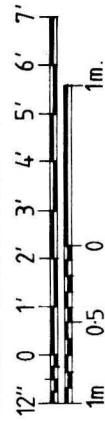
Port Side View
150 h.p. Bentley
Port wheel and wings omitted to show detail



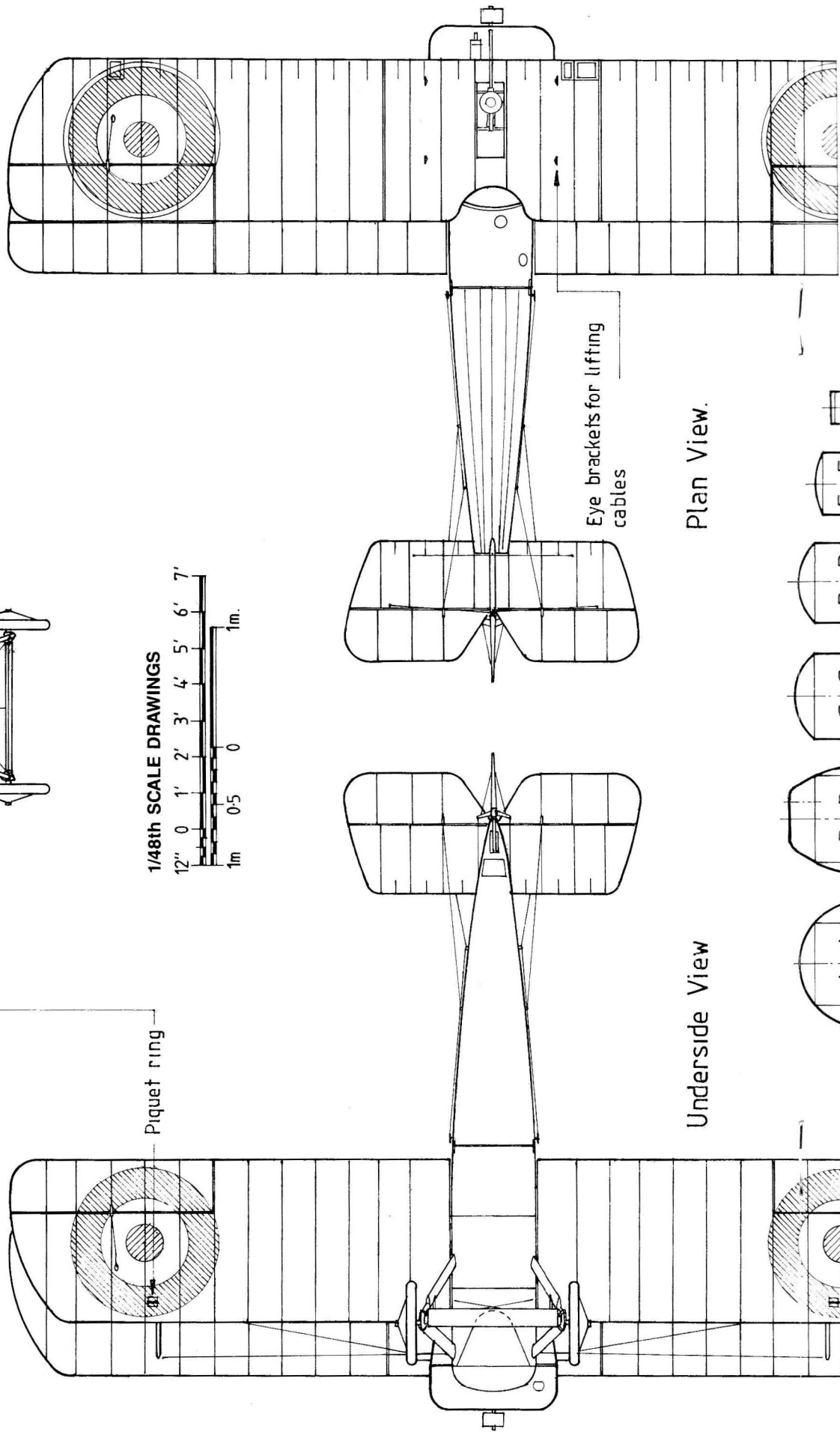
Cowling diameter, Clerget 41.1/4" A.R.1, 43.1/2"

Front View.

1/48th SCALE DRAWINGS



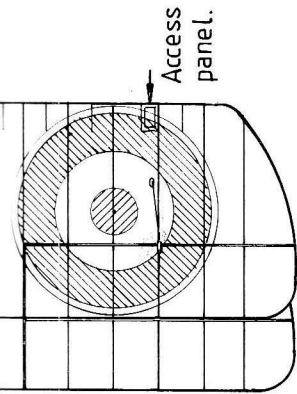
Piquet ring



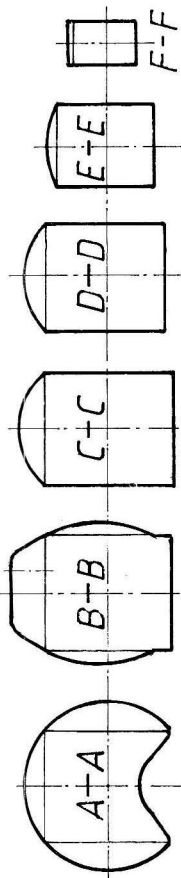
Eye brackets for lifting cables

Underside View

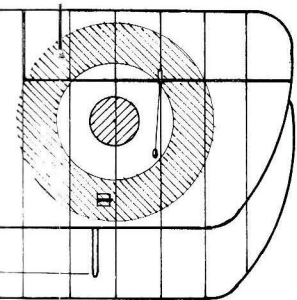
Plan View.



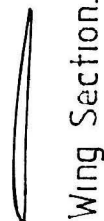
Access panel.



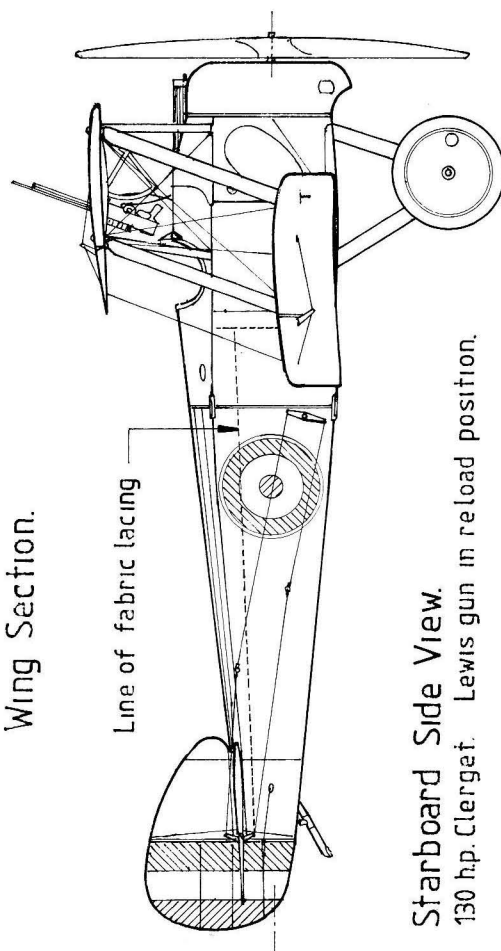
Fuselage Sections



A B C D F

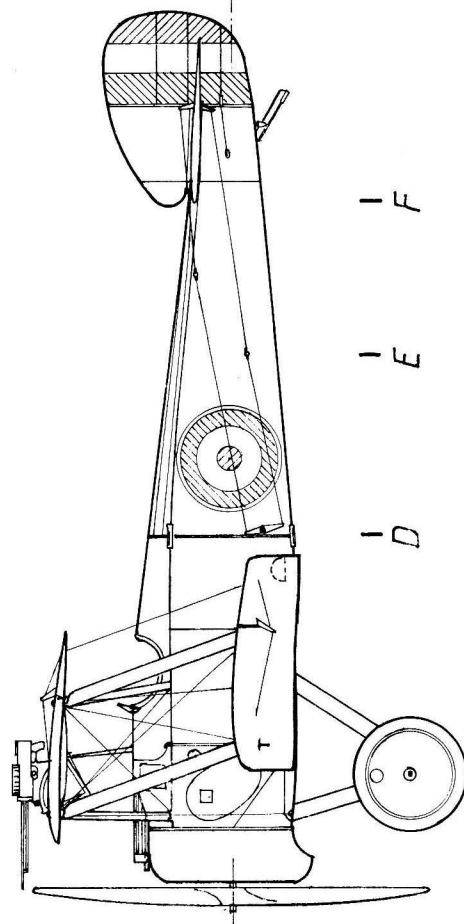


Wing Section.



Line of fabric lacing

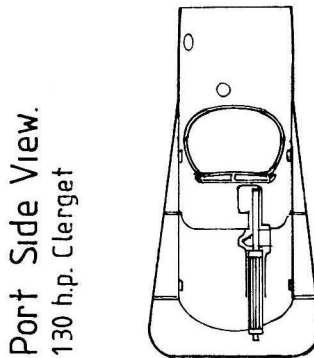
Starboard Side View.
130 h.p. Clerget. Lewis gun in reload position.



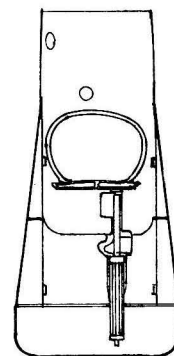
I D I E I F

Port Side View.
130 h.p. Clerget

I I I A B C

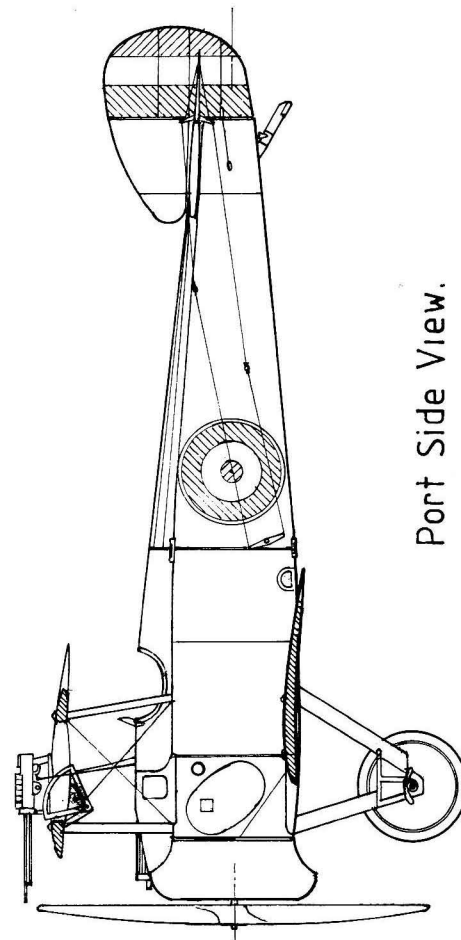


150 h.p. Bentley A.R.1



130 h.p. Clerget. 9B

Detail - Fuselage Decking.

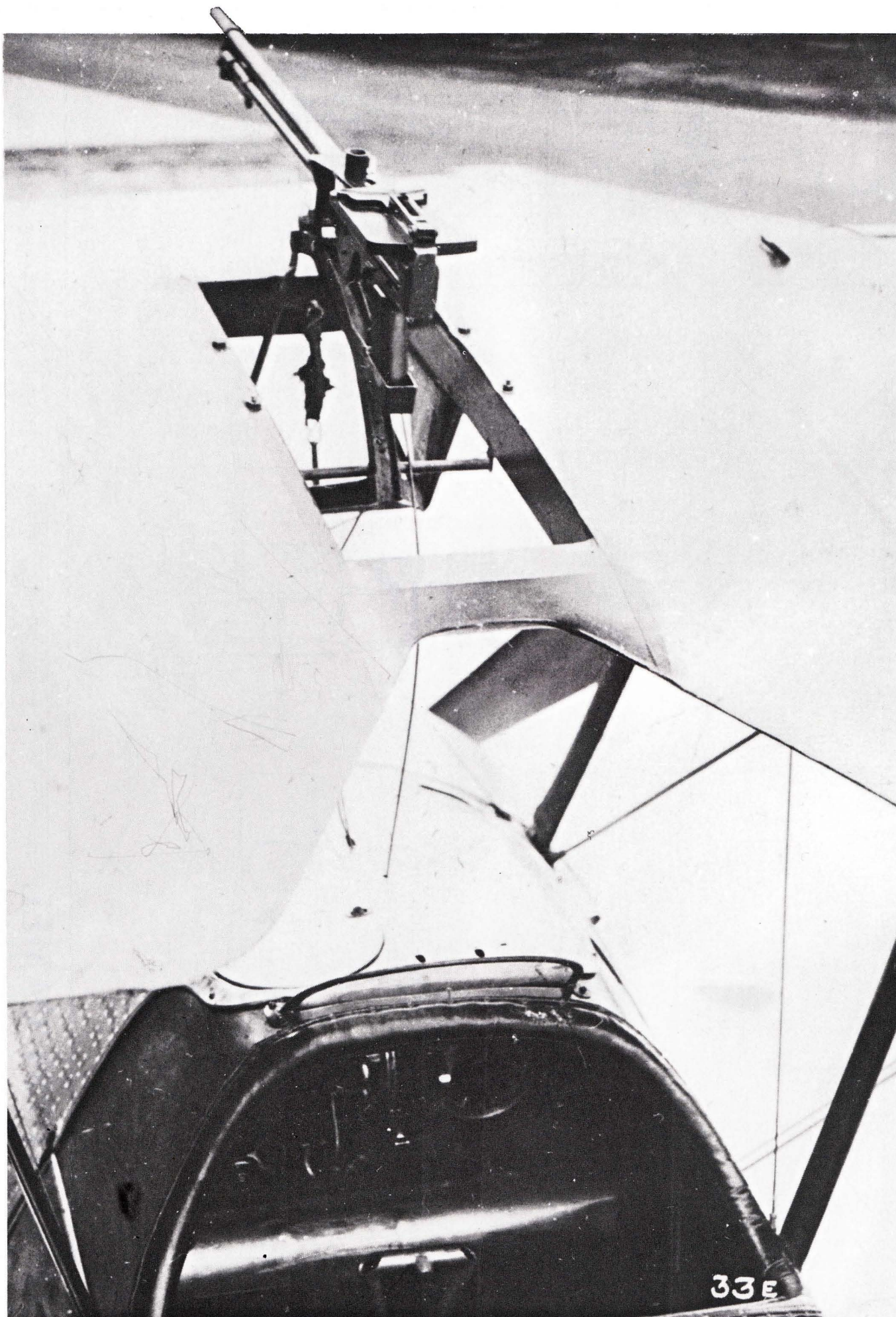


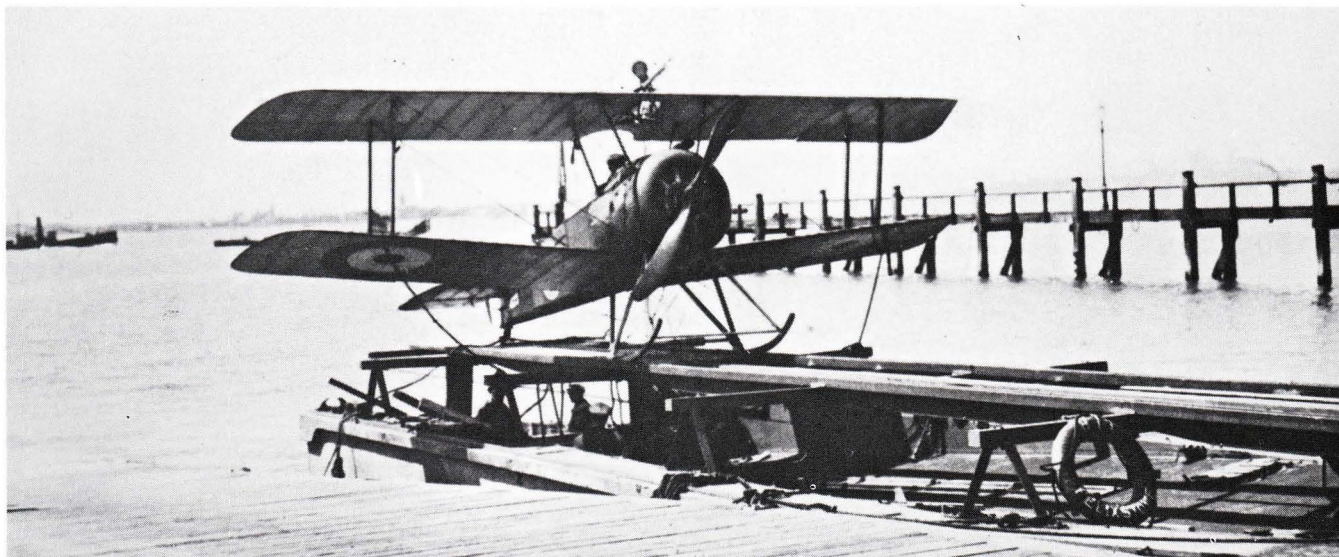
Port Side View.
150 h.p. Bentley.

Port wheel and wings omitted to show detail

SOPWITH 2F1 CAMEL

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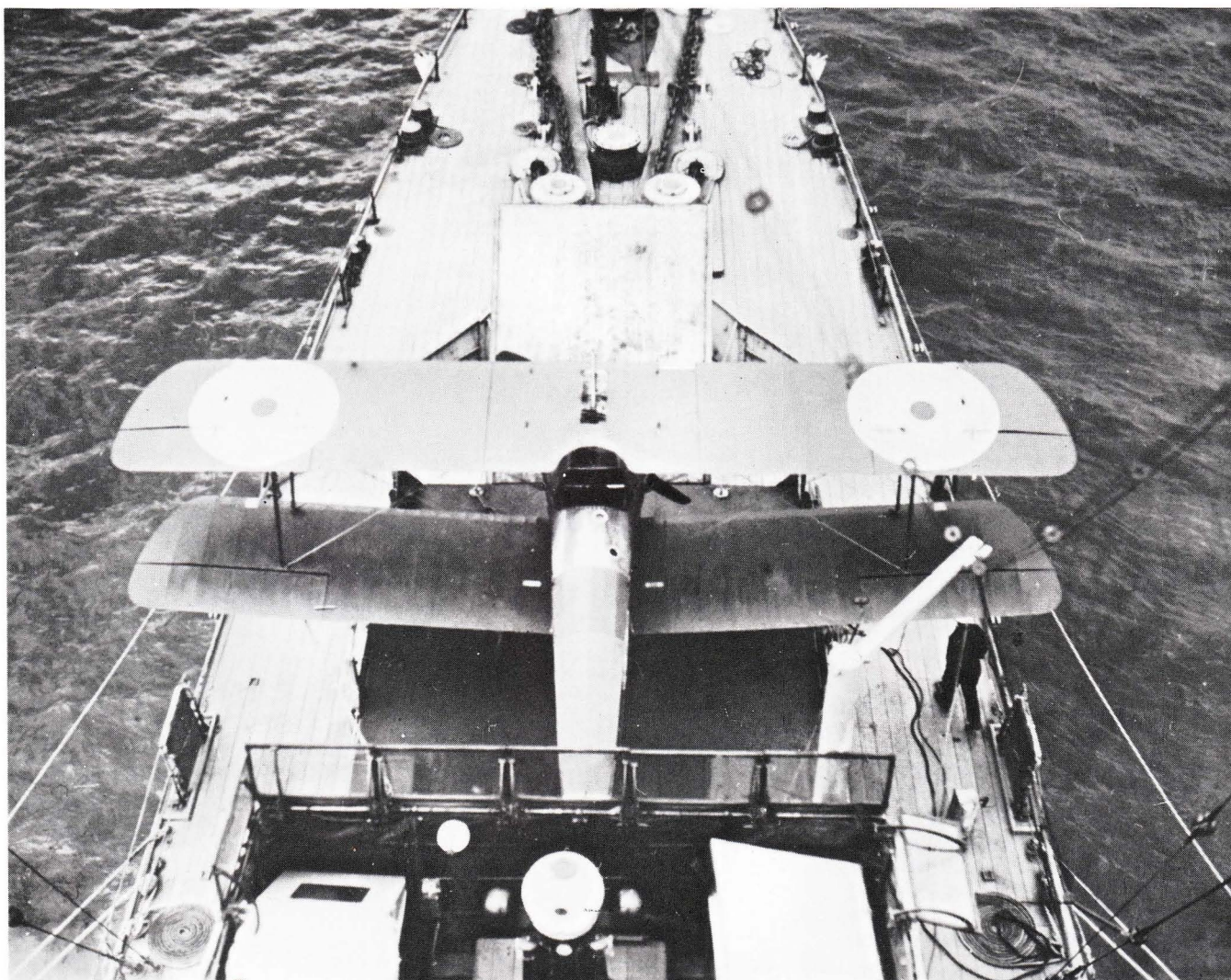




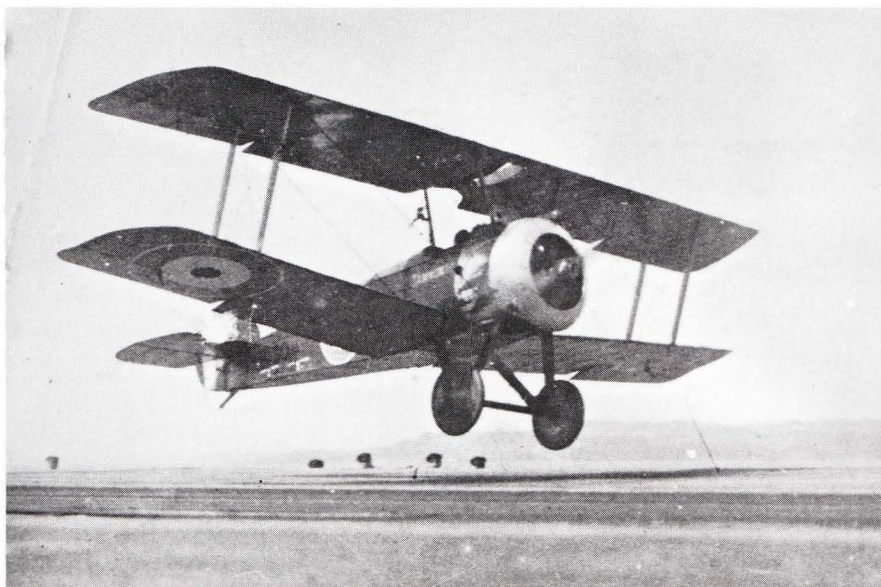
◀ The Lewis gun on its Admiralty Top Plane Mounting on N5, seen in a photograph dated September 18 1917. Also visible, directly over the upper attachment of the starboard forward centre-section strut, is one of the four slinging points on the centre section. Other details of interest are the windscreen style and shape of wing cut-out.

▲ At Felixstowe on May 29 1918, N6623 with rigid skid undercarriage sits on its lighter. Next day, its attempted take-off by Lt-Col C R Samson proved abortive; the Camel fell over the bows of the lighter and was run over by it; nevertheless Samson was saved, miraculously unhurt. Later experiments with a conventional wheeled undercarriage were to prove more successful.

▼ Another view of an unidentified 2F1 Camel aboard an *Arethusa* class cruiser — see also page 6. This unusual view clearly shows the hoisting rings and celluloid-covered leading edge inspection panel (to starboard) on the centre section. Note position of upper wing roundels and aileron clamps on lower wings. (RAF Museum)

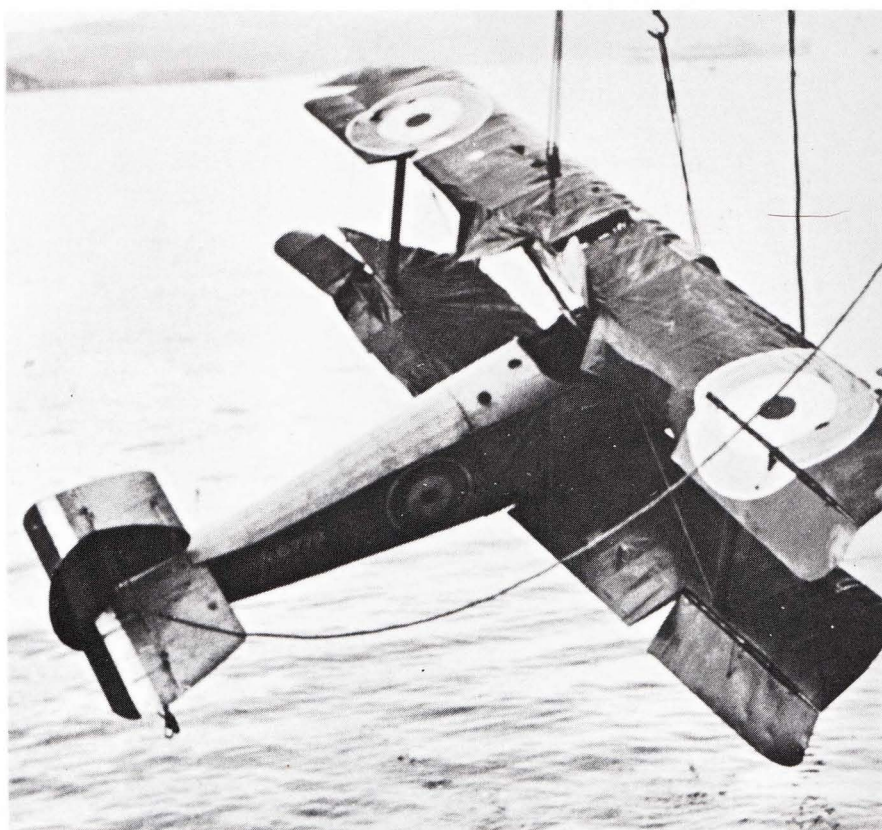


► N8130, here seen landing on HMS *Argus*, was a Hooper-built 2F1 that was used operationally against the Bolsheviks from Koivisto in 1919, (see also page 17). It bore the name *Tamworth*, and was evidently a presentation aircraft. (Ray Vann)



◄ In 1920 deck-flying trials were conducted with several types of aircraft on HMS *Eagle*. One of those involved was this 2F1, without armament but with hooks under the spreader bar and a propeller guard; the latter was considered necessary as a protection against the fore-and-aft securing wires that the hooks were intended to engage.

► N6779 in unhappier circumstances, date unknown. The normal expectation was that fighter aircraft flown off warships for operational purposes would have to end their flights by ditching and probably being lost, but in this case the likely cause would be engine failure beyond gliding distance of land.



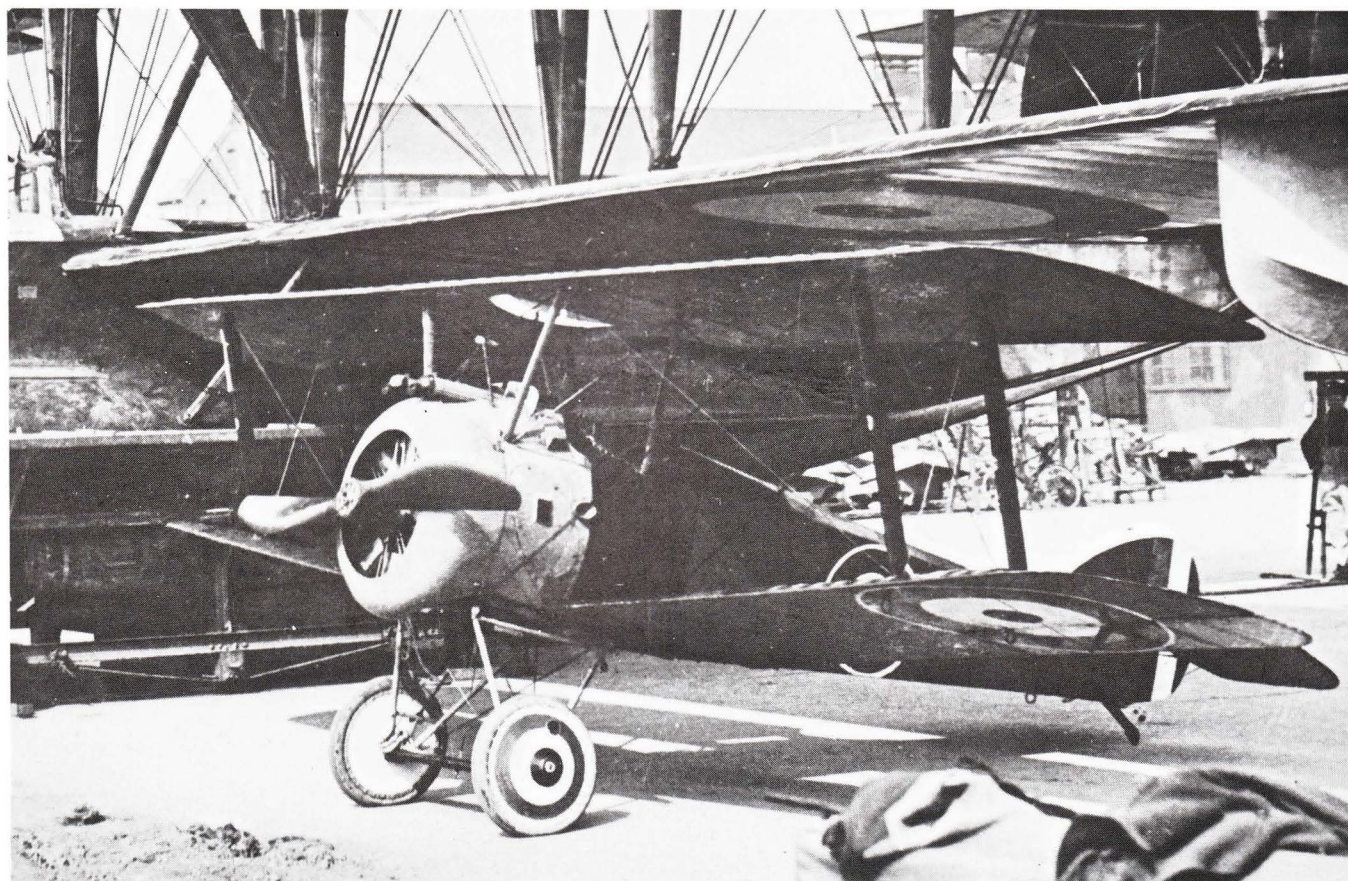


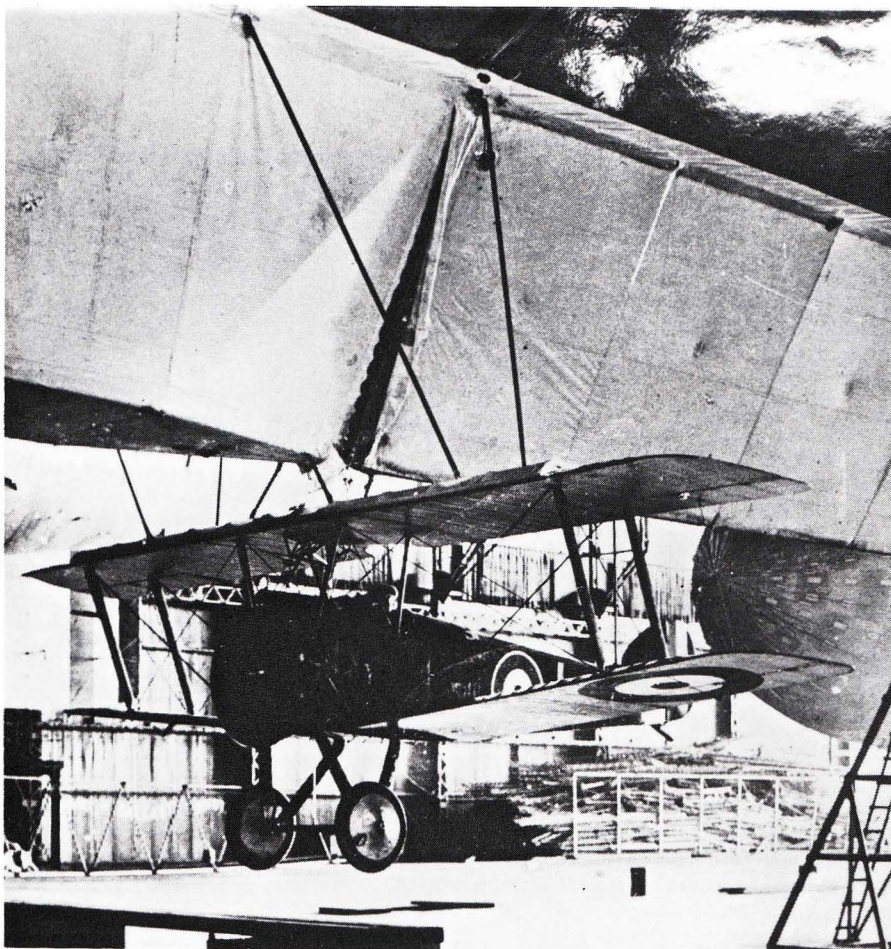
▲ The last ten Sopwith 2F1 Camels of the N7100-N7149 batch that was ordered from Beardmore were completed by Arrol-Johnston, Ltd. Here, at Turnhouse, stand N7146 and N7149 with blue/white/red striped elevators and distinctive application of their serial numbers. This familiar but crisp photograph reveals plenty of useful

details including the Admiralty Top Plane Mounting, Rotherham air pump on starboard rear centre-section strut and external elevator lever and control cables. (RAF Museum)

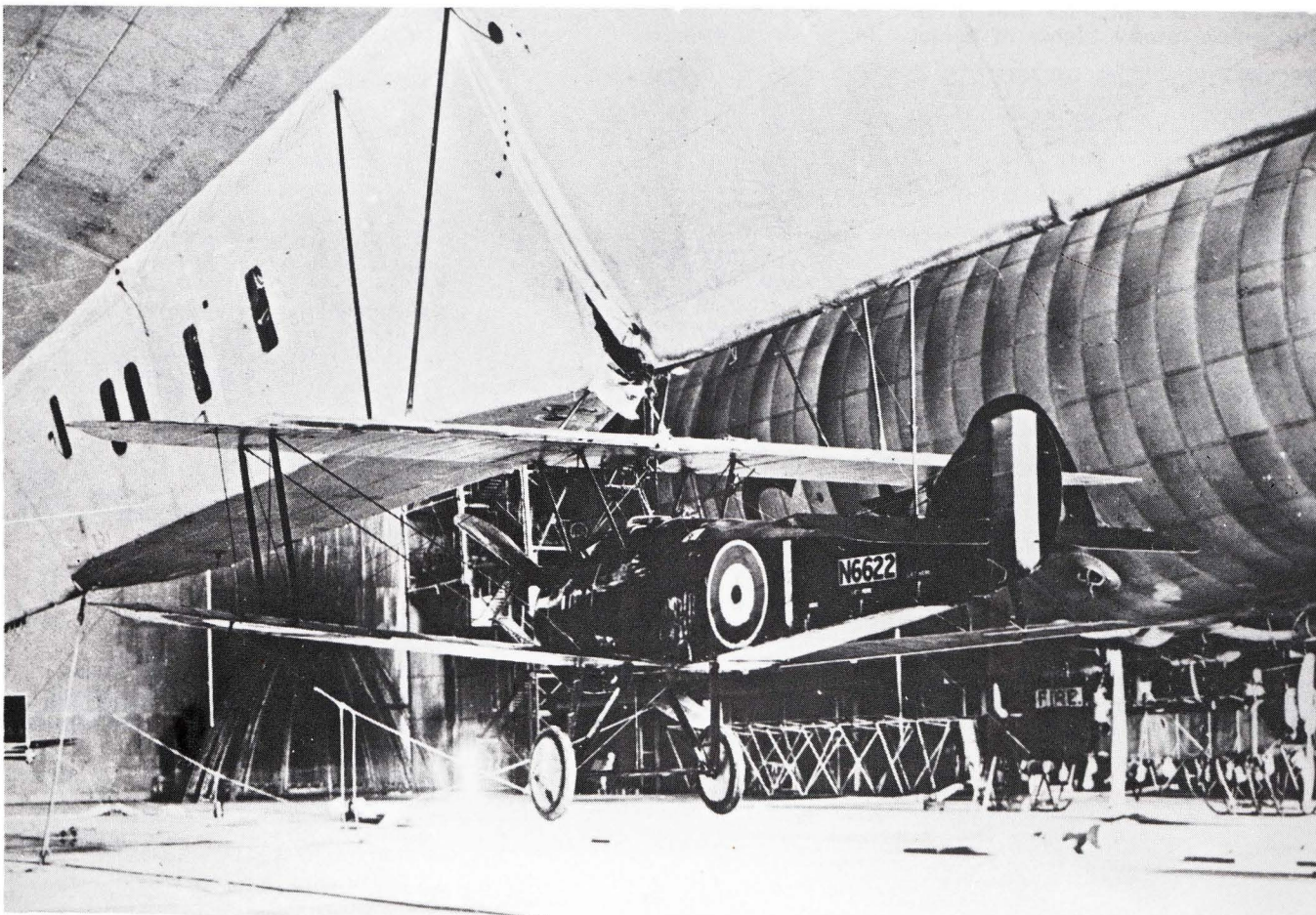
▼ After Stuart Culley's destruction of L53 he was the instigator of experiments with jettisonable undercarriages

on Camels: the idea had, of course, been applied earlier to the Beardmore SB3D. Such undercarriages were fitted to both F1 and 2F1 Camels at Felixstowe. One of the latter, unusually armed with twin Vickers guns, is here seen beside the Felixstowe Fury flying boat. Note the white outer rings to the lower wing markings.





◀▼The practice of using lighter-than-air vessels to carry heavier-than-aircraft was considered a worthy development and during the war many further such experiments were made. It was, at one stage, considered as a viable defence against Zeppelins with plans formulated for airship-carrying fighters to be borne aloft to lie in wait for the nocturnal raiders. No such system saw operational service however yet experiments continued through the war. In 1918 several 2F1 Camels were slung beneath the British rigid airship R23 and here are two views of the Sopwith-built 2F1 N6622 slung under this ship at Pulham, July 25 1918. For a full account of these remarkable experiments see the article 'At the drop of a Camel' by Philip Jarrett, *Cross & Cockade (Great Britain) Journal*, Vol. 8, No. 3, 1977. (G R Quick)





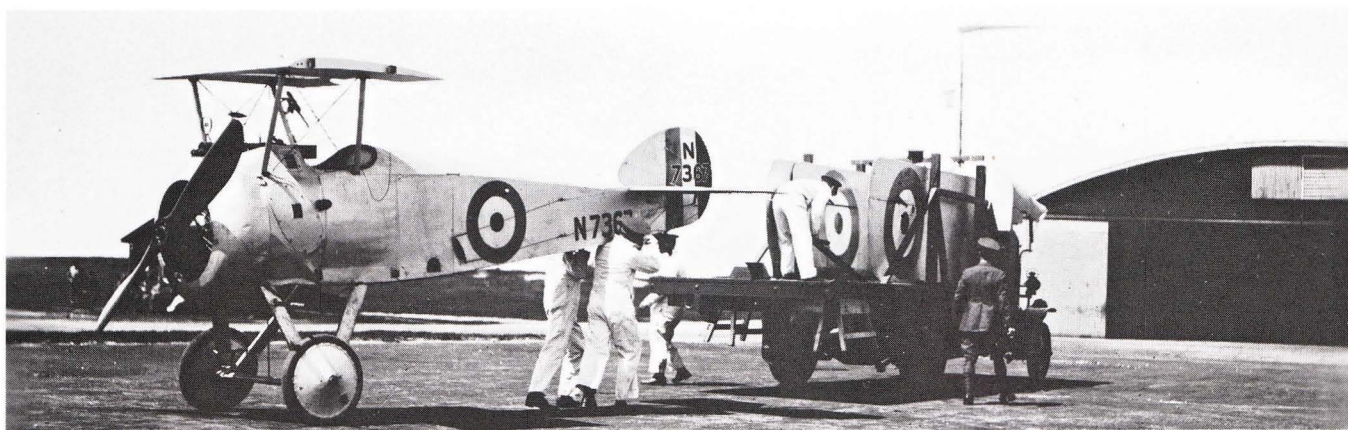
▲ Here seen at Koivisto in 1919, N8184 was one of the 2F1 Camels that were taken to the Baltic area in HMS *Vindictive* for anti-Bolshevik operations. Apparently no Lewis gun was fitted, but there was a bomb rack under the fuselage. N8184 was built by Clayton & Shuttleworth, Ltd. No details of colours are known but it is thought the

cowling and metal panels were painted in PC10 to match the remainder of the upper surfaces but this is not confirmed. (RAF Museum)

▼ Sopwith 2F1 Camel N8130 bearing the legend 'Tamworth' beneath its enlarged cockpit — see also page 14. N8130 is seen here at Koivisto in

October 1919, one of eight 2F1 Camels that went to the Baltic and used as fighter bombers in the anti-Bolshevik campaign. Three of them later served with the Latvians in November 1918. Note the bomb and its rack slung under the fuselage — the true purpose of the large stitched patch forward of the roundel is unknown. (RAF Museum)

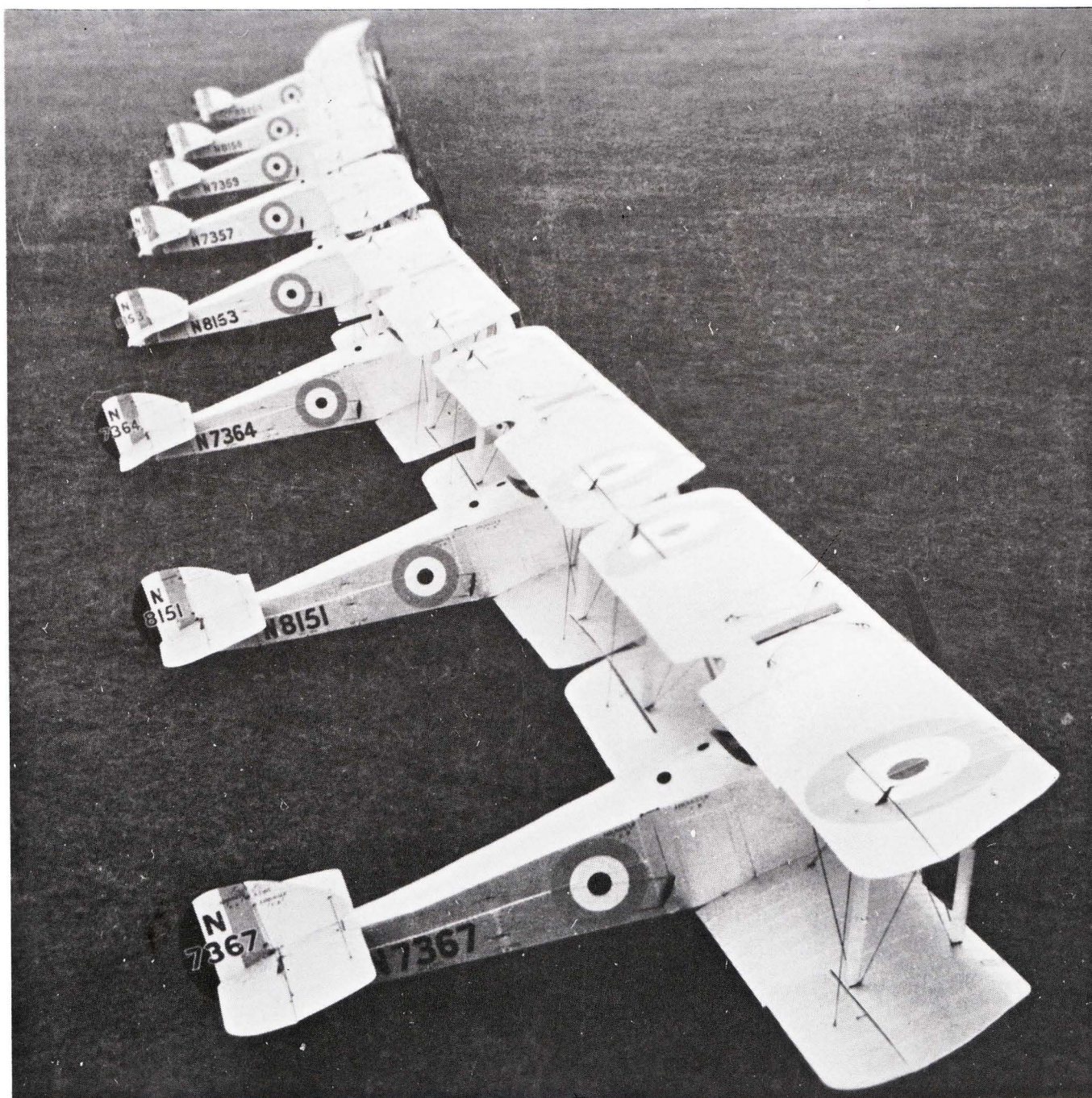




▲ N7367, one of nine Sopwith 2F1 Camels sent to Canada after the war, is seen here at Camp Borden being used in a demonstration of aeroplane

dismantling and re-erection. Note the greatly enlarged cockpit opening and single gun armament. The Canadian Camels were doped aluminium overall

with large black serials, white outlined on the rudder. These Camels enjoyed a comparatively long service. (*Public Archives Canada*)

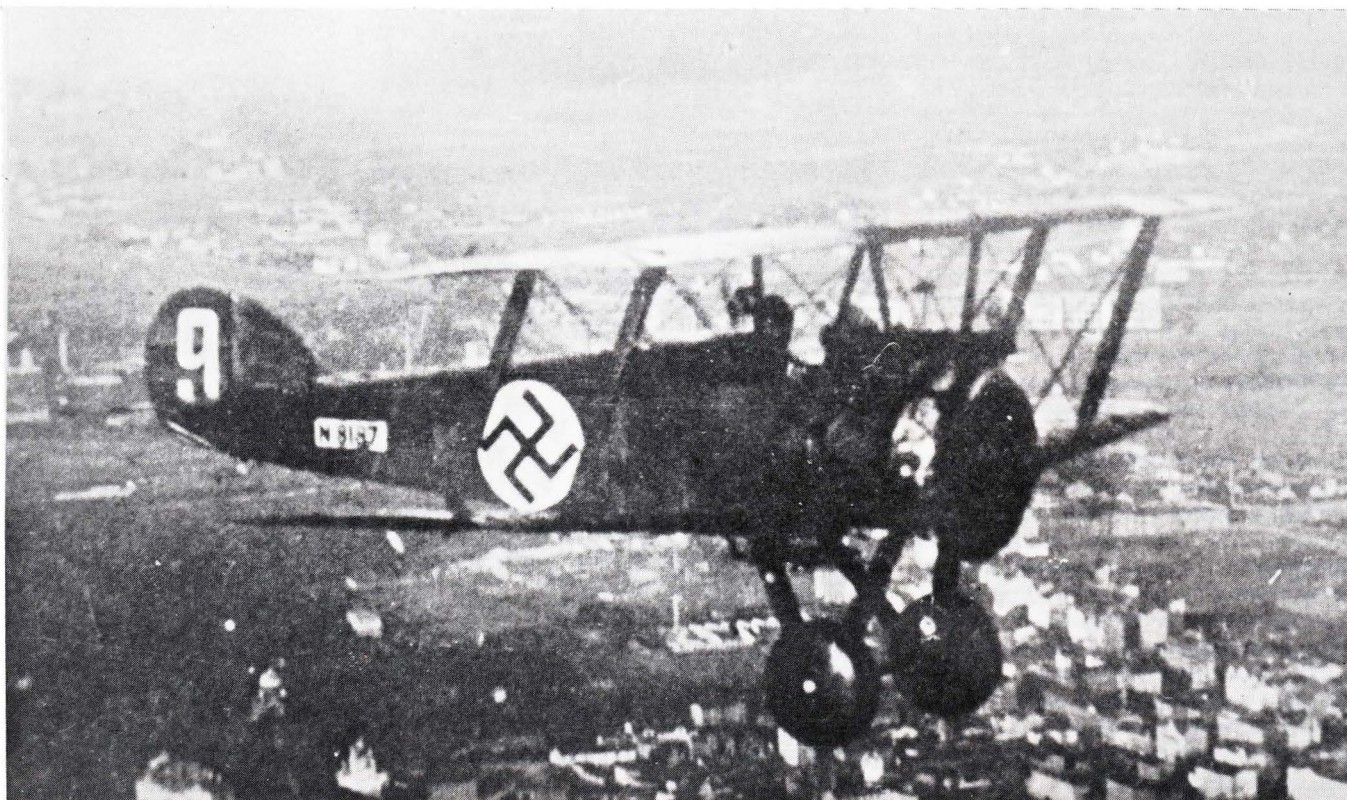




◀ The 2F1 Camels that went out to Canada, probably photographed at Camp Borden. From front to rear they are: N7367, N8151, N7364; N8153; N7357; N7359; N8156 and N8204. Note the upperwing slinging cables and attachment lugs, immaculate aluminium-dope finish and black stencilling on fuselages and fins. N8156, second from last in this line-up, is now exhibited at Ottawa's National Aviation Museum. It was restored to airworthiness in 1967 and currently wears the colours of a machine from HMS *Sidney*, 1919.
(Public Archives Canada)

▲ In 1919 several 2F1 Camels saw service in Northern Russia; subsequently both Estonia and Latvia operated the type. At least three machines saw Latvian service and are illustrated here among a motley collection of types at an air display at Riga on July 25 1920. These Camels bore more or less standard RAF colours with Latvian markings (a red Swastika on a white background) being applied over the British roundels. These 2F1s also retained their original serial numbers but the rudder stripes were painted over and large numerals applied in white or black with white outlines.

▼ Although of indifferent quality this photograph is one of very few extant air-to-air studies of a genuine 2F1 Camel. In Latvian service N8187 retained its original Royal Air Force serial number, for a while at least. The Latvian Camels appeared to have had their cowlings and metal panels doped in PC10 or a similar colour — note the flaking paint on N8187's cowling. It is also possible that the Latvian Camels bore pale blue undersides, but confirmation is lacking. The wing insignia were painted over large white square fields as opposed to the discs of the fuselage sides.



Fabric

CAMOUFLAGE AND MARKINGS

BY R L RIMELL

THE question of colours and markings for British aeroplanes of the World War One era is comparatively straightforward for the number of standard colour dopes was small compared to those adopted by the French and German air services. Yet there is always room for controversy and the colours used by the RFC, RNAS, and later RAF, continue to cause headaches for modellers seeking representative finishes. As will be seen in the accompanying table, variations in shades were quite marked although one must take into account the results of fading and the tendency of protective varnishes to darken the true colours.

Most 2F1s had their upper surfaces doped in PC10 (Pigmented Cellulose Spec No 10) which is a broad term for at least five individual preparations each differing slightly from the other. As a general rule the actual range of hues using PC10 pigments was between Methuen 3(E/F)8 to almost 5F8. As a rule of thumb earlier varnishes were somewhat lighter and on the olive/brown side while later-pigmented dopes were rather more brown orientated.

Grey was also commonly used for metal panels and cowlings and can be readily distinguished from PC10 on period photographs. In many cases fuselage undersides were also doped in PC10 and the colour often 'wrapped round' the flying and/or control surfaces by about 1½-2in. to provide an outlined effect on the clear doped surfaces.

The application from April 1916 of PC10 to airframes had somewhat of an adverse effect on the life of the national identification colours already being used and thus some new dopes, which resulted from earlier experiments, were used from the end of 1916 when it was decided to standardise military aeroplane markings for the RFC and RNAS. The new roundel red (VR2), almost a vermilion, was more durable than the earlier VR1 while the original VB1 blue faded quickly and resulted in a deeper shade of blue which also suffered the same problem. Finally, a new range of Ultramarine pigments was formulated and it was one of the darker versions that was at last accepted in terms of adhesion and non-flaking to become VB2.

During 1917 many British pilots and observers complained that the national markings were often difficult to differentiate from the surrounding PC10 resulting in an order on May 5 1917 that narrow white outlines were to be added to upper surface roundels. The white dope was redesignated VW3 following its change to a zinc oxide base. The final change to identification colours came about in the early part of 1918 when a durable red pigment was formulated. In

March, Red VR3 was introduced for the first time and thus the 'standard' colours became Red VR3, White VW3 and Blue VB2 and so they were to remain for the war years and up to the mid-1930s.

Other Colours

It is thought that some 2F1 Camels at least had their uppersurfaces finished in PC12, a colour frequently specified on Sopwith factory works drawings as the recommended finish. PC12, a reddish brown, was a colour more suited to the middle east theatre but it is known to have been used on several RNAS Sopwith Triplanes and it may have been used more liberally than was once thought. Certainly PC12 was used if stocks of PC10 were temporarily unavailable but it is, of course, quite impossible to detect from period photographs which of the two colours

were applied to a particular airframe.

Pale blue was applied to certain 2F1 Camel undersurfaces. Stuart Culley's famous Sopwith 2F1 at the Imperial War Museum bears small traces of the original undersurface colour beneath its post-war repaint — its current colour scheme is *not* authentic — and the shade of blue visible is surprisingly strong, (Methuen 22C/D7 approx).

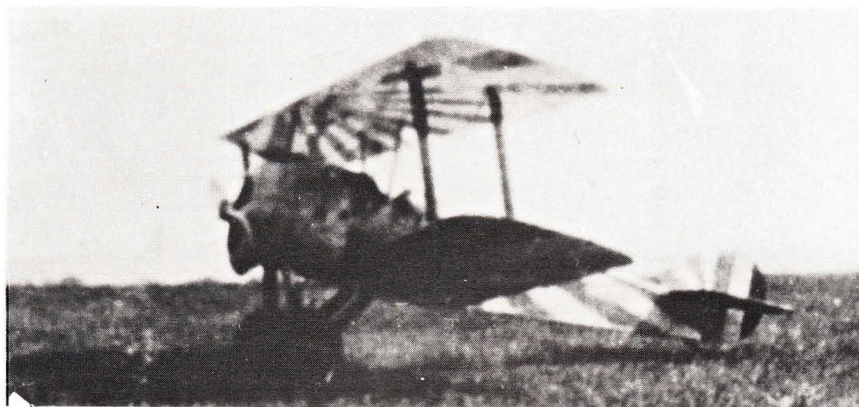
Most Beardmore-built 2F1 Camels bore elevators doped in the national colours although this practice was not exclusive to this company — certainly Culley's Camel bore them and study of the photographs reproduced in this book will reveal other examples.

The distinctive plywood panels around the Camel cockpit could be finished in several ways. Either they were over-painted in PC10/PC12, the Battleship Grey of the adjacent metal panels or they were merely varnished. A Copal varnish was used which gave the plywood a dark reddish brown colour; the resulting finish was quite glossy.

Centre section struts, of steel tube, were either painted PC10/12 or Battleship Grey. Interplane struts were normally clear-varnished while the undercarriage

▼ Captain Bernard Arthur Smart poses in front of his Sopwith 2F1 Camel with which he participated in the Tondern airship base raid of July 19 1918. This aeroplane is the subject of the front cover colour profile. (The late B A Smart).





▲ **Colourful Camel.** A frustratingly poor photograph of Major W G Moore's 2F1 at Turnhouse 1918. According to Major Moore's book 'Early Bird', he flew at least three brightly-coloured 2F1 Camels, this particular one being in red and white.

unit was usually doped in the camouflage colour(s) as were the wheel discs although several clear-doped examples of the latter were seen.

Few 2F1 Camels featured really elaborate colour schemes although doubtless those few that saw service with training units may have received a personal paint scheme. One example is illustrated here.

Markings on standard factory 2F1s were restricted to roundels in the usual six positions, rudder stripes, and serial numbers applied either in white characters or, more commonly, in black within a white rectangle. 'Lift Here' legends appeared on both sides of the fuselage whilst distinctive component stencilling on the starboard fuselage and fin/rudder sides characterised all Sopwith-built aeroplanes.

Size and style of serial numbers varied, mainly according to the manufacturer, one notable example being the large characters applied to N7149 (see page 15) originally ordered from William Beardmore and Co., Ltd., but sub-contracted to Arrol-Johnson, Ltd.

Roundel application could also vary. Usually only the fuselage and upper wing roundels were outlined with a narrow white ring but examples of undersurface roundels so marked can be seen on several machines depicted in this book. All of this was irrelevant to the seven Camels that took part in the Tondern raid of July 19 1918 for just prior to despatch all of their national markings were overdaubed in grey paint to render them less visible.

Publishers' note

For the convenience of modellers **Methuen** colour references, wherever possible, have been quoted and can be found in *The Methuen Handbook of Colour* by A Kornerup and J H Wanscher published by Methuen and Co. Ltd., a

book which provides over 1260 colour samples. Copies of the colour book are available at most main libraries or, if not, many libraries belonging to the Regional Libraries Bureau can obtain a loan from another member library which may carry the title. □

Methuen notations matched to extant fabric samples of contemporary British aeroplanes.

PC10 SAMPLES

3E8, 3F8, 4F2-4F8

VB3 RED SAMPLES

10B8, 10C8, 10D8, 10E8

VB2 BLUE SAMPLES

19D8, 20D7, 20E8, 21C7 21D7

'BATTLESHIP GREY' SAMPLES

1B1, 1C1

PC12 SAMPLES

8(E-F)8, 9E6, 9E8

RECOMMENDED REFERENCES

The Aeroplanes of the Royal Flying Corps (Military Wing) by J M Bruce (Putnam and Co. Ltd., 1982).

The Air Defence of Britain 1914-1918 by Christopher Cole and E F Cheeseman (Putnam and Co. Ltd., 1984).

British Aeroplanes 1914-1918 by J M Bruce (Putnam and Co. Ltd., 1957) Out of print.

British Military Aircraft of World War One (Arms & Armour Press, Ltd., 1976). Out of print.

'*RNAS Camel*' by P S Leaman. *Airfix Magazine*, December 1967.

Sopwith Camel — King of Combat by C Bowyer (Glasney Press, 1978).

Sopwith — The Man and his Aircraft by Bruce Robertson (Harleyford, 1970).

Warplanes of the First World War — 'Fighters, Volume Two' by J M Bruce. (Macdonald & Co. (Publishers) Ltd., 1965). Out of print.

Zeppelin! by R Rimell (Conway Maritime Press, 1984).

KEY TO COLOUR PLATES

SOPWITH 2F1 CAMEL PROTOTYPE (N5), Martlesham Heath, March 1917.

All upper surfaces: PC10

All lower surfaces: Clear-doped linen.

Engine cowlings and metal panels: Natural metal.

Wheel covers and fin: Clear-doped as shown or possibly white.

Source: Photographs, this book, page 2/3.

SOPWITH 2F1 CAMEL (N6812) HMS Redoubt, August 11 1918 flown by Lieutenant SD Culley.

All upper surfaces and wheel discs: PC10

All lower surfaces: Pale blue.

Engine cowlings and metal panels: Battleship Grey.

Striped elevators.

Sources: *Airfix Magazine*, December 1967.

Zeppelin! by RL Rimell, Conway Maritime Press, Ltd., pages 220 and 224.

This book, cover plate.

SOPWITH 2F1 CAMEL (N6602) HMS Furious, April 1918.

All upper surfaces and wheel discs: PC10

All lower surfaces: Clear-doped linen.

Engine cowlings and metal panels: Battleship Grey.

Fuselage markings in white. It is possible that the 'lattice' marking was also continued over the top of the rear fuselage.

Source: This book, page 8.

SPECIFICATIONS

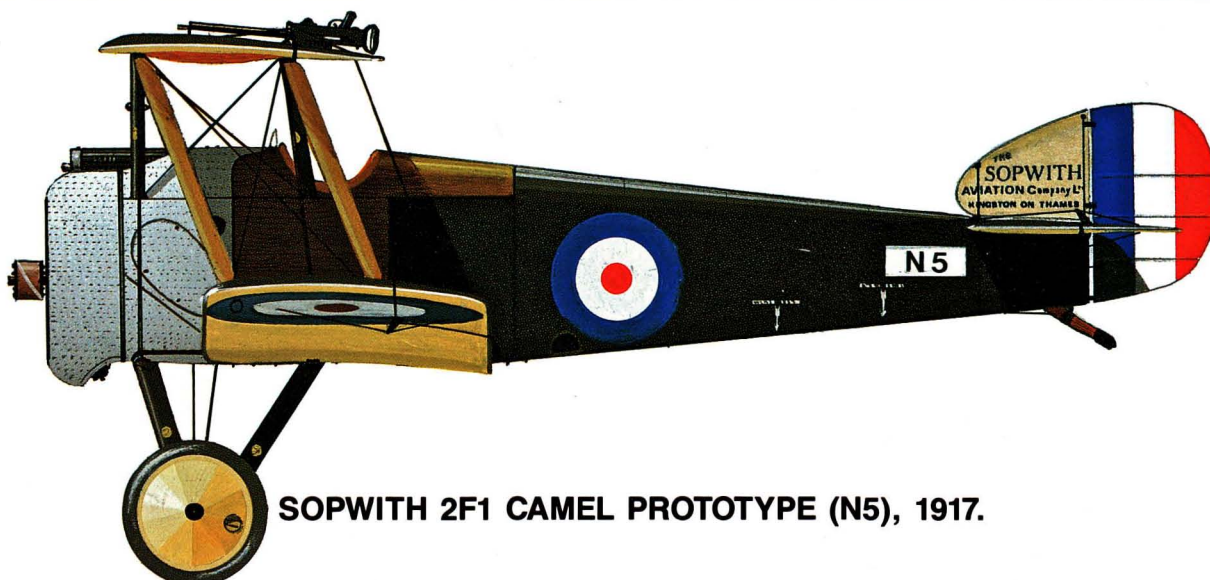
Power: One 130-hp Clerget 9B or 150-hp Bentley B.R.1.

Dimensions: Span 26 ft 11 in; length 18 ft 8 in; height 9 ft 1 in; wing area 221 sq ft.

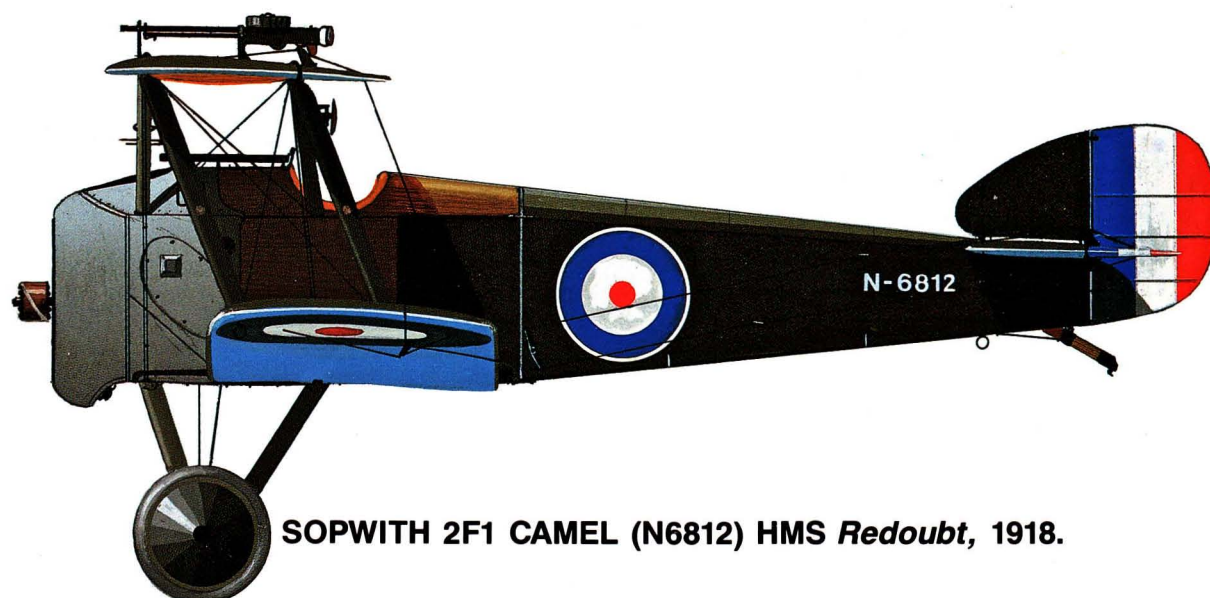
Weights: (BR1): Empty 1,036 lb; loaded 1,530 lb.

Performance: (BR1): Max. speed at 6,500 ft, 105.5 kt (121.5 mph); at 10,000 ft, 103 kt (118.6 mph); at 15,000 ft, 98 kt (112.8 mph). Climb to 6,500 ft, 6 mins; to 10,000 ft, 11 mins 30 secs; to 15,000 ft, 25 mins. Service ceiling 17,300 ft.

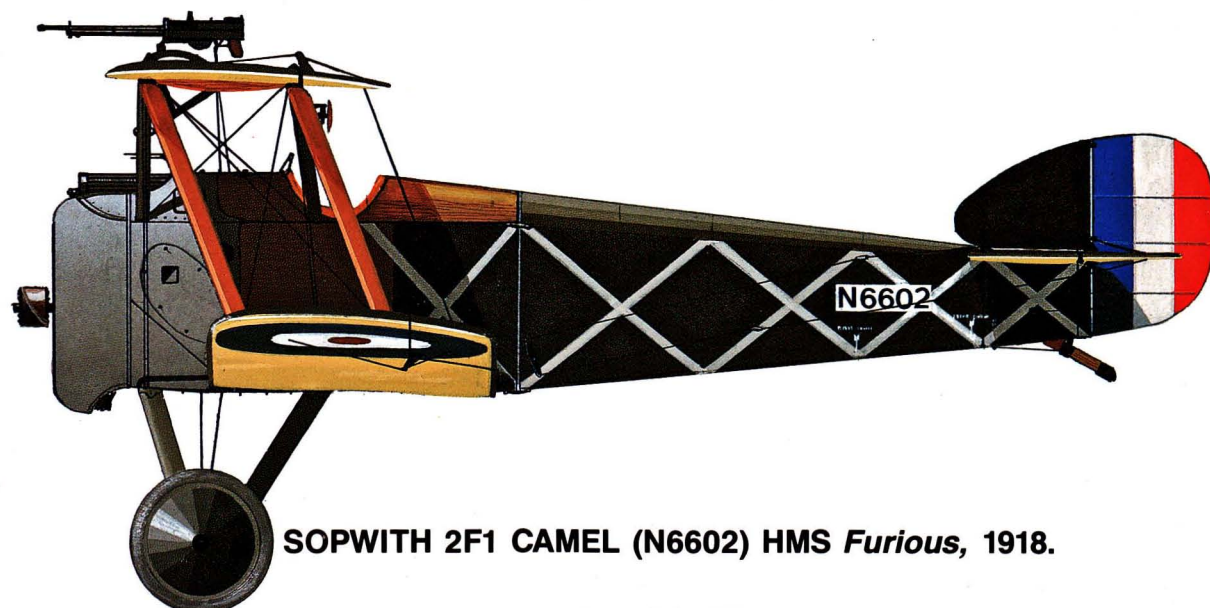
Armament: Standard — one fixed and synchronised 0.303 in Vickers machine gun, and one 0.303 in Lewis machine gun on Admiralty Top Plane Mounting. Variations and additions as described in text.



SOPWITH 2F1 CAMEL PROTOTYPE (N5), 1917.



SOPWITH 2F1 CAMEL (N6812) HMS *Redoubt*, 1918.



SOPWITH 2F1 CAMEL (N6602) HMS *Furious*, 1918.